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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,418	11/19/2003	Arun Rao	15145US02	7778
23446 7590 03/28/2008 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661				
EXAMINER FLANDERS, ANDREW C				
ART UNIT		PAPER NUMBER		
2615				
MAIL DATE		DELIVERY MODE		
03/28/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/717,418

Applicant(s)

RAO ET AL.

Examiner

ANDREW C. FLANDERS

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ottesen (U.S. Patent Application Publication 2001/0041062).

Regarding **Claim 1**, Ottesen discloses:

A method of reducing memory requirements by de-interleaving (i.e. transferring non-sequential data; paras 180 -190) audio information using static and dynamic buffers (buffers and storage devices in Fig. 11, the method comprising:

writing interleaved first audio channel information to a first static memory device (storing non sequential data into input buffer 66; paras 182 and Fig. 11);

de-interleaving the first audio channel information (setting up the system to store segments A1 and A2 in their proper contiguous locations; para 184);

writing de-interleaved first audio channel information to a second static memory device (i.e. writing segments A1 to An to their respective contiguous locations in memory; paras 184 - 186);

writing de-interleaved first audio channel information to a dynamic memory device from the second static memory device (i.e. transferring the data from DASD to the output buffer; Fig. 11).

Ottesen does not explicitly disclose the remaining limitations of Claim 1. Ottesen only discloses that audio/video data are decoded using a method similar to claim 1. Claim 1 requires first and second channel audio information. Ottesen does disclose in para 49 that the audio format conforms to one of many known standards. It is notoriously well known in cable systems to provide audio streams with more than one channel of sound. Stereo sound (L and R channel sound) as well as 5 or more channel sound is well known. While Ottesen isn't concerned with the number of channels used in playback, it would have been obvious to configure Ottesen's system to accommodate multiple channel sound sources.

Furthermore, Ottesen does not disclose reusing memory space allocated for the system (i.e. overwriting). However, it is notoriously well known to reuse memory space (i.e. space used by the input buffer in this case and other memories of fig. 10) in order to accommodate new data. It is desirable to configure a system in this manner in order to reduce the overall memory space needed.

In view of the above, modifying Ottesen to accommodate multiple audio channels and reusable memory, the modification further discloses:

overwriting interleaved first audio channel information with interleaved second audio channel information in the first static memory device (i.e. receiving the second channel information from the communication channel and storing it in the input buffer in Fig. 10; thereby overwriting the first channel data that is stored therein);

de-interleaving second audio channel information (setting up the system to store segments A1 and A2 in their proper contiguous locations; para 184);

writing de-interleaved second audio channel information to the second static memory device (i.e. writing segments A1 to An {second channel} to their respective contiguous locations in memory; paras 184 - 186);

overwriting interleaved second audio channel information in the first static memory with de- interleaved first audio channel information from the dynamic memory device (i.e. transferring the second channel data from DASD to the output buffer; Fig. 11; depending on the system memory, it is known to reallocate portions to operate and receive data dynamically depending on the program; thus it is obvious to reallocate the memory used for the input buffer to operate as the output buffer and vice versa).; and

decoding the first and second audio channel information (i.e. decoder and TV output Fig. 11).

Regarding **Claim 2**, in addition to the elements stated above regarding claim 1, the modification of Ottesen further discloses:

wherein the first audio channel information and the second audio channel information comprise similar audio information from adjacent sub-frames (i.e. first and second channel audio of the television signal typically includes L and R audio, which can be considered to be substantially similar).

Regarding **Claim 3**, in addition to the elements stated above regarding claim 2, the modification of Ottesen further discloses:

wherein similar audio information comprises audio information corresponding to a particular range of audio frequencies (audio tracks used by television systems typically contain audio within the range of human hearing 10 Hz - 17kHz. this meets the "particular range" limitation as it is a range that is typically used by television systems).

Regarding **Claim 4**, in addition to the elements stated above regarding claim 3, the modification of Ottesen further discloses:

maintaining audio quality of transmitted audio information by receiving audio information in an interleaved state (i.e. the audio information is received in a non-

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contiguous state {interleaved}; by virtue of the limitation, it therefore follows that the audio quality is maintained.)

Claims 5 – 18 are rejected under the same grounds as claims 1 – 4 as stated above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW C. FLANDERS whose telephone number is (571)272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7546. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/acf/

/Sinh N Tran/

Supervisory Patent Examiner, Art Unit 2615